

**PHENIX studies on ψ' and Υ measurements
at mid-rapidity in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV**

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Quarkonia are probes of the hot and dense matter that is formed in the most central relativistic heavy ion collisions. Lattice QCD scenarios predict a suppression of the different quarkonium states as a function of their binding energy and the system temperature or energy density. With the increase of the medium temperature, the ground states disappear last. Though the uncertainties on the cold nuclear effects are large, current PHENIX J/ψ data suggest that regeneration of uncorrelated heavy quark pairs may also be at play. The measurement of the relative yields of the different quarkonium states should provide important information on quarkonia production, melting and/or regeneration mechanisms. We report on the PHENIX Collaboration progress towards measuring ψ' and Υ at mid-rapidity in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV.